

IN THE CLAIMS

Please amend the claims as follows. Any other difference between the claims below and the prior state of the claims is unintentional and in the nature of a typographical error.

1. (Currently Amended) A semiconductor apparatus comprising ~~at least one a~~ double poly bipolar transistor and ~~at least one a~~ double poly metal oxide semiconductor (MOS) transistor; [[,]]

wherein a first polysilicon layer comprises a base of the double poly bipolar transistor and a gate of the double poly MOS transistor;

wherein a second polysilicon layer separate from the first polysilicon layer comprises an emitter of the double poly bipolar transistor and a source/drain of the double poly MOS transistor;

wherein [[a]] the base of the double poly bipolar transistor contains comprises a first dopant having a first dopant concentration, and wherein the [[a]] gate of the double poly metal oxide semiconductor MOS transistor contains comprises the said first dopant having the said first dopant concentration; and

wherein [[an]] the emitter of the double poly bipolar transistor contains comprises a second dopant having a second dopant concentration, and wherein [[a]] the source/drain of the double poly metal oxide semiconductor MOS transistor contains comprises the said second dopant having the said second dopant concentration.

~~; wherein said semiconductor apparatus further comprises a first polysilicon layer and a~~

~~second silicon layer that is separate from the first polysilicon layer.~~

2. (Currently Amended) The semiconductor apparatus as set forth in Claim 1,
wherein:

~~said at least one double poly bipolar transistor and said at least one double poly metal oxide
semiconductor (MOS) transistor comprise a substrate and a first layer of polysilicon (Poly1)
material wherein:~~

the first polysilicon layer comprises first polysilicon layer material in the double poly bipolar
transistor and first polysilicon layer material in the double poly MOS transistor;

~~said the first layer of polysilicon layer (Poly1) material in said at least one the double poly
bipolar transistor is doped with comprises impurity ions of said the first dopant [[to]] forming the
base of the double poly bipolar transistor, the base comprising an extrinsic base; and~~

~~said the first layer of polysilicon layer (Poly1) material in said at least one the double poly
MOS transistor is doped with comprises impurity ions of said the first dopant [[to]] forming the gate
of the double poly MOS transistor a MOS transistor gate.~~

3. (Currently Amended) The semiconductor apparatus as set forth in Claim 2,
wherein:

~~said at least one the double poly bipolar transistor is a PNP transistor; and wherein
said at least one the double poly MOS transistor is an NMOS transistor.~~

4. (Currently Amended) The semiconductor apparatus as set forth in Claim 2,
wherein:

~~said at least one~~ the double poly bipolar transistor is an NPN transistor; and ~~wherein~~
~~said at least one~~ the double poly MOS transistor is a PMOS transistor.

5.-6. (Cancelled)

7. (Currently Amended) The semiconductor apparatus as set forth in Claim 2,
~~wherein~~ further comprising:

a substrate;

~~said substrate is implanted with impurity ions of a third dopant in the substrate [[to]] forming~~
an intrinsic base ~~in said at least one of the~~ double poly bipolar transistor; and

~~said substrate is simultaneously implanted with impurity ions of said the third dopant in the~~
substrate [[to]] forming a lightly doped drain in said at least one of the double poly MOS transistor.

8. (Currently Amended) The semiconductor apparatus as set forth in Claim 7,
wherein ~~said the~~ lightly doped drain ~~in said at least one of the~~ double poly MOS transistor is self
aligned.

9. (Currently Amended) The semiconductor apparatus as set forth in Claim 7,
wherein:

~~said at least one~~ the double poly bipolar transistor is a PNP transistor; and ~~wherein~~
~~said at least one~~ the double poly MOS transistor is an NMOS transistor.

10. (Currently Amended) The semiconductor apparatus as set forth in Claim 7,
wherein:

~~said at least one~~ the double poly bipolar transistor is an NPN transistor; and ~~wherein~~
~~said at least one~~ the double poly MOS transistor is a PMOS transistor.

11.-12. (Cancelled)

13. (Currently Amended) The semiconductor apparatus as set forth in Claim 7,
wherein:

~~said at least one double poly bipolar transistor and said at least one double poly metal
oxide semiconductor (MOS) transistor further comprise a second layer of polysilicon (Poly2)
material wherein:~~

the second polysilicon layer comprises second polysilicon layer material in the double poly
bipolar transistor and second polysilicon layer material in the double poly MOS transistor;

~~said the second layer of polysilicon layer (Poly2) material in said at least one the double poly
bipolar transistor is doped with comprises impurity ions of said the second dopant [[to]] forming the
[[an]] emitter of the double poly bipolar transistor; and~~

~~said the second layer of polysilicon layer (Poly2) material in said at least one the double poly
MOS transistor is simultaneously doped with comprises impurity ions of said the second dopant
[[to]] forming the a MOS source/drain of the double poly MOS transistor.~~

14. (Currently Amended) The semiconductor apparatus as set forth in Claim 13,
wherein said the emitter ~~in said at least one~~ of the double poly bipolar transistor is self aligned to
[[an]] the extrinsic base of ~~said at least one~~ the double poly bipolar transistor.

15. (Currently Amended) The semiconductor apparatus as set forth in Claim 13, wherein said ~~MOS~~ the source/drain in said ~~at least one~~ of the double poly MOS transistor is self aligned to ~~[[a]] the gate of said at least one~~ the double poly MOS transistor.

16. (Currently Amended) The semiconductor apparatus as set forth in Claim 13, wherein said the second layer of polysilicon layer (Poly2) material in said ~~at least one~~ the double poly bipolar transistor is ~~simultaneously doped with~~ further comprises impurity ions of said the second dopant ~~[[to]] forming~~ a deep collector of the double poly bipolar transistor.

17. (Currently Amended) The semiconductor apparatus as set forth in Claim 13, wherein said ~~MOS~~ the source/drain in said the second layer of polysilicon layer (Poly2) material in said ~~at least one~~ the double poly MOS transistor is ~~etched to~~ comprises separate said ~~MOS~~ source/drain into a source and ~~[[a]] drain~~ regions.

18.-19. (Cancelled)

20. (Currently Amended) The semiconductor apparatus as set forth in Claim 13, wherein:

~~said at least one~~ the double poly bipolar transistor is an NPN transistor; and wherein
~~said at least one~~ the double poly MOS transistor is a PMOS transistor.

21. (Currently Amended) The semiconductor apparatus as set forth in Claim 13,
wherein:
~~said at least one~~ the double poly bipolar transistor is a PNP transistor; and ~~wherein~~
~~said at least one~~ the double poly MOS transistor is an NMOS transistor.

22.-42. (Cancelled)

43. (Currently Amended) A semiconductor apparatus comprising ~~at least one a~~ double poly bipolar transistor and ~~at least one a~~ double poly metal oxide semiconductor (MOS) transistor;

wherein a base of the double poly bipolar transistor ~~contains~~ comprises a first dopant having a first dopant concentration, and wherein a gate of the double poly MOS transistor ~~contains said~~ comprises the first dopant having ~~said the~~ first dopant concentration; and

wherein an emitter of the double poly bipolar transistor ~~contains~~ comprises a second dopant having a second dopant concentration, and wherein a source/drain of the double poly MOS transistor ~~contains said~~ comprises the second dopant having ~~said the~~ second dopant concentration.

44. (Currently Amended) The semiconductor apparatus as set forth in Claim 43, wherein:

~~said at least one the~~ double poly bipolar transistor and ~~said at least one the~~ double poly MOS transistor ~~comprise a substrate and~~ a first layer of polysilicon material; ~~wherein:~~

~~said the~~ first layer of polysilicon material in ~~said at least one the~~ double poly bipolar transistor ~~is doped with~~ comprises impurity ions of ~~said the~~ first dopant ~~[[to]]~~ forming the base of the double poly bipolar transistor, the base comprising an extrinsic base; and

~~said the~~ first layer of polysilicon material in ~~said at least one the~~ double poly MOS transistor ~~is doped with~~ comprises impurity ions of ~~said the~~ first dopant ~~[[to]]~~ forming the gate of the double poly MOS transistor ~~a MOS transistor gate.~~

45. (Currently Amended) The semiconductor apparatus as set forth in Claim 44,
wherein:

~~said at least one~~ the double poly bipolar transistor and ~~said at least one~~ the double poly MOS
transistor further comprise a second layer of polysilicon material; ~~wherein:~~

~~said~~ the second layer of polysilicon material in ~~said at least one~~ the double poly bipolar
transistor ~~is doped with~~ comprises impurity ions of ~~said~~ the second dopant ~~[[to]] forming~~ ~~[[an]]~~ the
emitter of the double poly bipolar transistor; and

~~said~~ the second layer of polysilicon material in ~~said at least one~~ the double poly
MOS transistor ~~is simultaneously doped with~~ comprises impurity ions of ~~said~~ the second dopant
~~[[to]] forming the a MOS source/drain of the double poly MOS transistor.~~

46. (Currently Amended) The semiconductor apparatus as set forth in Claim 45,
wherein further comprising:

a substrate;

~~said substrate is implanted with~~ impurity ions of a third dopant in the substrate ~~[[to]] forming~~
an intrinsic base ~~in said at least one~~ of the double poly bipolar transistor; and

~~said substrate is simultaneously implanted with~~ impurity ions of ~~said~~ the third dopant in the
substrate ~~[[to]] forming~~ a lightly doped drain ~~in said at least one~~ of the double poly MOS transistor.

47. (Currently Amended) The semiconductor apparatus as set forth in Claim 45, wherein ~~said~~ the second layer of polysilicon material in ~~said at least one~~ the double poly bipolar transistor ~~is simultaneously doped with~~ further comprises impurity ions of said the second dopant ~~[[to]]~~ forming a deep collector of the double poly bipolar transistor.

48. (New) An apparatus comprising:

a semiconductor substrate;

a first polysilicon layer over the substrate; and

a second polysilicon layer over the first polysilicon layer;

wherein the first polysilicon layer comprises an extrinsic base of a double poly bipolar transistor and a gate of a double poly metal oxide semiconductor (MOS) transistor;

wherein the second polysilicon layer comprises an emitter of the double poly bipolar transistor and a source/drain and a deep collector of the double poly MOS transistor;

wherein the extrinsic base of the double poly bipolar transistor comprises a first dopant having a first dopant concentration, and wherein the gate of the double poly MOS transistor comprises the first dopant having the first dopant concentration;

wherein the emitter of the double poly bipolar transistor comprises a second dopant having a second dopant concentration, and wherein the source/drain of the double poly MOS transistor comprises the second dopant having the second dopant concentration; and

wherein the semiconductor substrate comprises a first region having a third dopant forming an intrinsic base of the double poly bipolar transistor and a second region having the third dopant forming a lightly doped drain of the double poly MOS transistor.